

Patterson, for the purpose of having a copy taken for the cabinet of the U. S. Mint, of which institution Dr. Rittenhouse was for some years the director. The said loan to be subject to such conditions as may be thought proper by the Curators of the Society.

Stated Meeting, September 20.

Present, eleven members.

DR. PATTERSON, President, in the Chair.

Letters were read:—

From the Geological Society of London, dated Somerset House, 6th June, 1850; and from the Royal Geographical Society of London, dated Waterloo Place, 20th July, 1850, respectively acknowledging the receipt of No. 44, of the Proceedings of this Society:—

From B. A. Gould, Jr., dated Cambridge, 7th September, 1850, announcing the presentation, through him, of a donation from Prof. Schumacher, of Altona, to this Society: and—

From F. Le Play, Inspector of the Ecole des Mines, dated Paris, August, 1850, in relation to certain numbers of the Proceedings of this Society, which have not been received at the Ecole des Mines; also announcing a donation to the Society.

The following donations were announced:—

FOR THE LIBRARY.

Journal of the Royal Geographical Society of London. Vol. XX.

Part 1. London, 1850. 8vo.—*From the Society.*

Journal of the Royal Asiatic Society of Great Britain and Ireland.

Vol. XX. Part 2. London, 1850. 8vo.—*From the Society.*

List of the Members, Officers, &c. of the Royal Institution of Great Britain, with the Report of the Visitors, for the year 1849. London, 1850. 8vo.—*From the Institution.*

Quarterly Journal of the Geological Society of London. Nos. 22 and 23. London, 1850. 8vo.—*From the Society.*

Report of the Nineteenth Meeting of the British Association for the

- Advancement of Science; held at Birmingham, in September, 1849. London, 1850. 8vo.—*From the British Association.*
- Annales des Mines. Quatrième Série. Tome XVI. 5 and 6 livraisons de 1849. Paris. 8vo. — *From the Ecole des Mines.*
- Mémoire sur la Constitution Mineralogique et Chimique des Roches des Vosges. Recherches sur l'Euphotide. Recherches sur le Porphyre Quartzifère. Sur le Porphyre Amygdaloïde d'Oberstein. Sur le Pouvoir Magnetique des Roches. Par M. A. Delesse, Ingenieur des Mines, &c. 5 Pamphlets. 8vo. Paris.—*From the Author.*
- Denkmäler aus Ägypten und Äthiopien, nach den Zeichnungen der von Seiner Majestät dem Könige von Preussen, Friedrich Wilhelm IV. nach diesen ländern gesendeten, und in den Jahren 1842, 1845, ausgeführten wissenschaftlichen Expedition auf befehl seiner Majestät. Herausgegeben und erläutert von R. Lepsius. Berlin, 1849. 4to.—*From Prof. Lepsius.*
- Ergänzungs-Heft zu den Astronomischen Nachrichten. Vom Herausgeber. Altona, 1849. 4to.—*From Prof. Schumacher, the Editor.*
- Annals and Magazine of Natural History, including Zoology, Botany and Geology. Vol. V. No. 30. June, 1850. London. 8vo.—*From Sir W. Jardine, Baronet.*
- Archæologia Americana. Transactions and Collections of the American Antiquarian Society. Vol. III. Part 1. Cambridge, Mass. 1850. 8vo.—*From the Society.*
- The Origin and Growth of Civil Liberty in Maryland. A Discourse delivered by George William Brown, before the Maryland Historical Society, Baltimore, April 12, 1850, being the Fifth Annual Address to that Association. Baltimore, 1850. 8vo.—*From the Maryland Historical Society.*
- The American Journal of Science and Arts. Second Series. No. 29. Sept. 1850. New Haven. 8vo.—*From Profs. Silliman and Dana, Editors.*
- Journal of the Franklin Institute. Third Series. Vol. XX. No. 3. Sept. 1850. Philadelphia. 8vo.—*From the Institute.*
- The African Repository. Vol. XXVI. No. 9. Sept. 1850. Washington. 8vo.—*From the American Colonization Society.*
- The Medical News and Library. Vol. VIII. No. 93. Sept. 1850. Philadelphia. 8vo.—*From Lea & Blanchard.*
- The Plough, the Loom and the Anvil. Vol. III. No. 3. Sept. 1850. Philadelphia. 8vo.—*From J. S. Skinner, Esq., Editor.*

- First Biennial Report on the Geology of Alabama. By M. Tuomey, State Geologist, &c. Tuscaloosa, 1850. 8vo.—*From the Author.*
- The Mormons. A Discourse delivered before the Historical Society of Pennsylvania, March 26, 1850. By Thomas L. Kane. Philadelphia. 8vo.—*From the Author.*
- A Reply to "Hints" on the Reorganization of the Navy. February, 1845. 8vo.—*From Dr. Ruschenberger, U. S. N.*
- A Brief History of an Existing Controversy on the Subject of Assimilated Rank in the Navy of the U. S. By W. S. W. R. Philadelphia, 1850.—*From the same.*
- Exhibit of the Affairs of the Ohio and Pennsylvania Rail-road Company. Pittsburgh, July 1, 1850. 8vo.—*From S. W. Roberts, Esq., Chief Engineer.*

Mr. Trego announced the death of Dr. Gerard Troost, a member of this Society, who died at Nashville, Tennessee, on the 14th August, 1850.

Dr. F. Bache announced the deaths—of Dr. Joseph Hartsorne, of Philadelphia, a member of this Society, who died on the 20th August, in the 71st year of his age—of Geo. Emlen, of Philadelphia, a member of this Society, who died on the 27th August, in the 66th year of his age—and of Louis Philippe, ex-king of the French, a member of this Society, who died at Clermont, England, 26th August, 1850, aged 76.

Judge Kane read a letter from his son, Dr. E. K. Kane, U. S. N., Senior Surgeon of the American Arctic Expedition, now engaged in searching for Sir John Franklin and his company. It is dated 20th June, 1850, in sight of the island of Disko, coast of Greenland. The letter contains an interesting review of facts and arguments on the possibility of rescuing the missing explorers.

Sir John Franklin's party, consisting of 138 persons, left the Thames on the 26th of May, 1845, in two exploring vessels, attended by a transport. Their general instructions were to proceed by Baffin's Bay, through Lancaster Sound, without stopping to examine any openings to the northward or southward, but pushing on to the westward, in latitude about $74\frac{1}{2}^{\circ}$, till they should reach the longitude of Cape Walker, in west longitude about 98° , and thence taking a direct course for Behring's straits. Should this be found impracticable,

the views of Sir John Franklin, as communicated to his friends, Sir Edward Parry and Col. Sabine, were to pass into Wellington channel, a strait extending northward, in longitude $93\frac{1}{2}^{\circ}$, and which was described by Capt. Parry, in 1819, as a "broad opening, free from ice, and as open and navigable as any part of the Atlantic." The two vessels of the expedition were last seen on the 26th of July, 1845, in latitude $74^{\circ} 48'$, longitude $66^{\circ} 13'$, moored to an iceberg, awaiting an opening through the pack ice into Lancaster sound; the transport having left them shortly before that time, "well, and sanguine" of success.

Dr. Kane's first inquiry is, could the party have subsisted up to the present time?

The transport, he says, left them furnished with the estimated allowance of provisions, stores, and fuel, for three years. This means, according to the published report of the Navy Victualling Board, that the party was abundantly supplied for four years, and could subsist for a much longer time; Arctic expeditions being always fitted out on a scale of exuberant liberality. Our own, for instance, says Dr. Kane, which is provisioned by estimate for only two years and a half, can carry on its operations for five without suffering from want.

Nor, he adds, must we undervalue the resources of a region rich in animal life, it is true of a migratory and therefore capricious character, but not the less to be depended on during a term of years. Sir John Ross, an absentee of four winters, owed his support, in a very great degree, to the hordes of migrating salmon. Rae, in his late expedition, was almost entirely sustained by the chase. Franklin himself lived for nearly a whole winter on resources equally precarious. And Goodsir, in his little work on the upper Baffin's bay region, describes the *awk* (*alca alle*) as coming from the north in such stupendous quantities, as to "supply, in a few hours, the nutriment of years." In fact, Wrangell and Richardson, and hosts of others, have pointed to these very latitudes, or those still further north, as the sources of annual migration.

Dr. K. refers to the facility with which the Esquimaux construct their snow-huts, and the abundance of oils they obtain for fuel from marine mammalia and fishes, and to the known experience, prudence, and aptitude of resource of Sir John Franklin, as negating the probability that the party can have sunk under the rigour of the climate.

He next discusses the question, whether they can have been destroyed by accident. He speaks of the manner in which navigation

among the ice is conducted by vessels that are in company; carefully avoiding, as far as practicable, a joint exposure to the same perils; aiding each other in difficulties, and rescuing each others' crews in case of wreck; and he argues the double improbability of both ships having encountered the same calamity at the same moment. But even supposing this, he shows that the chances are great of their crews escaping upon the ice, and reclaiming their stores from the wreck afterwards: the Arctic ocean is rarely tempestuous; and when it has been so, the loss of life has been small, in consequence of this resort. In the great storm of 1830, which destroyed more than thirty ships and maimed twelve others, their crews, numbering nearly a thousand souls, escaped temporarily upon the ice, and reached succour at last with the loss of only six lives.

That Sir John Franklin has not been heard of since 1845, is scarcely to be wondered at. The Arctic sea was unusually open in the summer of that year, and has been closed since, until the present season, by ice of unusual extent and density. It is a remarkable fact, that of all the expeditions which have attempted the rescue of his party, not a single one has succeeded in reaching either Cape Walker, the first point indicated in his instructions, or Wellington channel, which he intended to explore. Of the three expeditions fitted out in 1848, and since heard from; one, the *Herald* and *Plover*, entered by Behring's straits, penetrated to 178° west, and returned: another, under Sir John Richardson, reached the Arctic sea by the Mackenzie river, but failed to get further: and the third, under Sir James Ross, the *Enterprize* and *Endeavour*, was beset by peculiar misfortunes, and returned without attaining the first point of inquiry. Yet Cape Walker and Wellington channel were both of them passed four several times by Captain Parry, in earlier years, and they are almost on the verge of the daily route of the Lancaster sound whalers.

When last seen, the party was not more than some 430 miles from Cape Walker, and it had about six weeks of the summer before it. If it was not destroyed before reaching that point, there are memorials there of its progress and purposes, perhaps of its fate; for it is the practice of all Arctic explorers, and one that was specially enjoined on Capt. Franklin's party, to mark their way by cairns and signal poles, burying full memoranda at their bases; and these would be imperishable in that region, and little liable to be disturbed.

The expeditions now afloat, are two noble vessels, on the Behring's straits side, with a permanent depôt of provisions established for their use at Kotzebue inlet; two steamers with their tenders, to follow the

various inlets of Lancaster sound; Capt. Penny, of the whaling service, engaged by the British government, in the far northern passages of Baffin's bay; a private expedition, under the command of Sir John Ross; and another to co-operate with him, which has been organized under the immediate auspices of Lady Franklin. To these is now added the American expedition, consisting of two brigantines, the *Advance* and *Rescue*, fitted out by the munificence of a New York merchant, Henry Grinnell, Esq., and officered and manned by volunteers from the Navy of the United States.

Dr. Kane's letter closes with inquiring into the probabilities of the Franklin party being found by either of these expeditions. "Though the field of exploration," he says, "seems vast at first view, reaching from Cape Barrow, on the west, in longitude 155°, to Cape Clarence, on the east, in west longitude 90°, and extending from those points indefinitely north; yet the avenues by which it is to be approached are few and narrowly limited. All the indications of the last four seasons have been against the onward progress of the party to a considerable distance, as they explain the impracticability of its return after reaching any of the points to which it was destined. The colossal masses of floating ice, which we have already met with, and their immense number, show that the barriers to Arctic exploration have once more given way. Where Franklin entered, others can now follow for the first time; and I am myself convinced, that for some one or other of these, there is yet in reserve the happiness of effecting his rescue."

Mr. Justice stated some observations recently made by him on the existence and progress southward of the "*Wheat-worm*," which is supposed to have come originally from Canada.

He mentioned the appearance of the worm in the white wheat, at his farm on the river Delaware, in Bucks county, Pennsylvania. From observations made by him, he is induced to believe that grain growing on heavy clay soils is most obnoxious to the attack of the worm, as the grain does not harden as rapidly as in looser and warmer soils. The worm appears to be engendered within the chaff or outside covering of the grain, and its ravages are more decided, while the grain continues in a milky state. The head of wheat may present all the appearances of being full and heavy until near the time of ripening, when, instead of a change of colour, from green to yellow, indicating perfection, it remains of a dirty green, and inspec-

tion develops a withered and light grain. As many as three worms were on one grain which he examined. The colour of the insect is a bright yellow, the intestinal canal distinctly visible through the transparent covering as a dark line. This has led some observers to the conclusion, that it was marked with a brown stripe, but this is not the case, the peristaltic motion of the canal being seen under the microscope. The variety of wheat known as "Mediterranean," growing in the same field, was free from the worm, which he attributed to its hardening sooner than the white wheat.

Judge Kane corroborated the statement of Mr. Justice, that the variety of wheat termed "Mediterranean," appears to be wholly or in a great measure exempt from the attacks of this insect.

The pending nominations were read.

Stated Meeting, October 4.

Present, twelve members.

Dr. PATTERSON, President, in the Chair.

The following donations were announced:—

FOR THE LIBRARY.

Memoir on the Explosiveness of Nitre, with a view to elucidate its agency in the tremendous explosion of July, 1845, in New York.

By Robert Hare, M.D. (Smithsonian Contributions.) Washington, 1849. 4to.—*From the Author.*

The Plough, the Loom and the Anvil. Vol. III. No. 4. Oct. 1850. Philadelphia. 8vo.—*From the Editor, J. S. Skinner, Esq.*

The proceedings of the Trustees of the University at Nashville, Tennessee, on the announcement of the death of Dr. Troost, Professor of Chemistry, Geology and Mineralogy, in the University, were read.

Dr. Dunglison announced the death of Mr. Judah Dobson, of Philadelphia, a member of this Society, who died on 26th September last.

The pending nominations were read.